

I CLAIM:

1. A device for controlling a power kite, comprising:

a graspable handle portion;

at least three control lines that operatively tether the handle portion to separate positions on the kite, each control line having a deployed length; and

a sheeting mechanism including a linkage structure adapted to move translationally to positively and negatively adjust the deployed length of a subset of the at least three control lines, independent of the deployed length of the remaining control lines.

2. The device of claim 1, the deployed length of each control line being measured from the handle portion to a position on the power kite at which the control line is connected.

3. The device of claim 1, wherein the sheeting mechanism includes a flexible connector that connects the linkage structure to the subset of control lines.

4. The device of claim 3, wherein the connector is selected from the group consisting of a line, a cord, a strip, and a belt.

5. The device of claim 1, wherein the sheeting mechanism includes a pulley mechanism.

6. The device of claim 5, wherein translational movement of the linkage structure relative to the handle portion adjusts spacing of the pulley mechanism from the handle portion.

7. The device of claim 5, wherein the pulley mechanism is configured to be disposed generally between the handle portion and the power kite during operation of the power kite.

8. The device of claim 5, wherein the pulley mechanism is configured to be disposed generally between the handle portion and a person operating the power kite.

9. The device of claim 5, wherein pulley mechanism includes a plurality of pulley mechanisms that are rotationally coupled.

10. The device of claim 9, wherein the sheeting mechanism includes a flexible connector coupled to each of the pulley mechanisms and having a pair of end regions, and wherein each of the end regions is fixed in relation to the handle portion.

11. The device of claim 9, wherein translational movement of the linkage structure by a distance is configured to move each of the plurality of pulley mechanisms by the distance.

5 12. The device of claim 1, wherein the linkage structure is configured to be connected to an operator of the power kite so that the operator can move the handle portion relative to the linkage structure during operation of the power kite to produce relative translational movement of the linkage structure.

10 13. The device of claim 1, wherein the device is a variable-line controller.

14. The device of claim 1, wherein the device is a fixed-line controller.

15 15. The device of claim 14, wherein the subset of control lines for which the deployed length is adjusted has a fixed length measured from the sheeting mechanism to the power kite.

16. The device of claim 14, wherein each control line of the subset includes a proximal end region connected to the sheeting mechanism, and wherein the deployed
20 length of the subset of control lines is defined by summation of a fixed length measured from the proximal end region to the power kite and a variable length measured from the proximal end region to the handle portion.

17. The device of claim 1, wherein the sheeting mechanism includes a cleating mechanism that is actuable to restrict at least one of negative and positive adjustment of the deployed length of the subset of control lines.

18. The device of claim 17, wherein the cleating mechanism is actuable to selectively restrict only one of negative and positive adjustment of the deployed length of the subset of control lines.

19. A method for controlling a power kite, comprising:
connecting a control device to separate positions on the power kite using at least three control lines;
launching the kite into the air; and
adjusting a deployed length of a subset of the at least three control lines independent of a deployed length of the remaining control lines by translational movement of a linkage structure connected to the subset of control lines.

20. The method of claim 19, the deployed length of each control line being measured from a handle portion of the control device to the power kite.

21. The method of claim 19, wherein the step of connecting includes creating a connection between a proximal end region of each of the subset of control lines and the linkage structure, and wherein the deployed length of the subset of control lines is defined by summation of a fixed length measured from the proximal end region to the kite and a variable length measured from the proximal end region to the handle portion.

22. The method of claim 19, wherein the linkage structure is connected to a person operating the power kite, to space the handle portion a distance from the person when the linkage structure is under tension, and wherein the step of adjusting includes moving the handle portion relative to change the distance of the handle portion from the person.

23. The method of claim 19, further comprising the step of restricting additional translational movement of the linkage structure after the step of adjusting.

24. The method of claim 23, wherein the step of restricting includes actuating a cleating mechanism.

25. The method of claim 19, wherein the step of launching includes increasing the deployed length of the subset of control lines and the remaining control lines concurrently.

26. A device for controlling a power kite, comprising:

a graspable handle portion;

at least three control lines that operatively tether the handle portion to separate positions on the kite, each control line having a deployed length; and

5 means for positively and negatively adjusting the deployed length of a subset of the at least three control lines, independent of the deployed length of the remaining control lines, by translational movement of a linkage means.